

Remarks

The Office Action dated February 16, 2006 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 5-19 and 25-28 are pending in this application. Claims 5-12, 17-19, and 24-26 stand rejected. Claims 1-4 and 20-24 have been canceled. Claims 13-16 and 27-28 are withdrawn from consideration.

In accordance with 37 C.F.R. 1.136(a), a one month extension of time is submitted herewith to extend the due date of the response to the Office Action dated February 16, 2006, for the above-identified patent application from May 16, 2006, through and including June 16, 2006. In accordance with 37 C.F.R. 1.17(a), authorization to charge a deposit account in the amount of \$120.00 to cover this extension of time request also is submitted herewith.

The rejection of Claims 5-12, 17-19, and 24-26 under 35 U.S.C. § 102(b) as being anticipated by Latter et al. (US 4,442,065) is respectfully traversed.

Latter et al. describe a nuclear reactor core catcher that is located below the floor of the containment vessel. The core catcher includes "a blast or explosion isolation conduit extending downward from the main floor of the nuclear reactor plant immediately below the reactor core . . ." and "a core-catcher heat exchanger coupled to the isolation tube . . ." (see Col. 2, lines 25-40). Latter et al. further describe that the "structure which has been retrofitted to the nuclear reactor includes an isolation tube 18, and a core catcher heat exchanger structure 20. The floor of the containment structure 12 has been thinned down at 22, so that, in the unlikely event of a melt-down of the core 14, the floor 22 will be penetrated by the melted down fragments, and they will descend into the isolation tube 18 and eventually down into the core catcher heat exchanger structure 20" (see Col. 4, lines 38-46). "The isolation tube or conduit 18 includes transverse

sheets, such as thin sheets of steel 24, and suitable layers of shock absorbing material which is relatively light in weight, such as sand, as shown by reference numerals 26, supported by the sheet material 24. Similar arrangements may be provided in the central area of the heat exchanger 20 to delay the descent of the molten core and related material, so that a slow controlled descent is achieved which will not destroy the heat exchanger walls by undue shock" (see Col. 4, lines 47-56). "The entire assembly including the isolation tube 18 and the core-catcher heat exchanger 20 is enclosed in a reinforced concrete shell 34. As best shown in FIG. 2, the core-catcher heat exchanger includes the inner walls 36 and the outer walls 38 which may be extensions of the walls 28 and 32 respectively, which enclose the isolation conduit" (see Col. 4, lines 60-66). Notably, there is no structure located between the bottom of reactor pressure vessel 14 and floor 22 (see Figure 1).

Independent Claim 9 of the present application recites in part "An assembly comprising: a containment vessel comprising a suppression pool, a drywell and a floor, said drywell comprising a sidewall extending from said floor, said sidewall separating said suppression pool from said drywell; a reactor pressure vessel installed inside said containment vessel; a base grid disposed below said pressure vessel and spaced vertically above said floor of said containment vessel to define a sump therebetween; an annular base grid shield wall extending vertically upward from said base grid, said base grid shield wall having a configuration comprising at least one of: (a) said base grid shield wall spaced inwardly from said drywell sidewall to define an annular channel therebetween; and (b) said base grid shield wall positioned adjacent said drywell sidewall; at least one flow baffle in said sump . . .".

Latter et al. do not describe nor suggest an assembly as recited in Claim 9. Particularly, Latter et al. do not describe nor suggest a base grid disposed below the pressure vessel and

spaced vertically above the floor of the containment vessel to define a sump therebetween, and an annular base grid shield wall extending vertically upward from the base grid that is either spaced inwardly from the drywell sidewall or positioned adjacent the drywell sidewall. Rather, Latter et al. describe a core catcher that is located below the floor of the containment vessel. The Office Action asserts that "[i]n section 4 of the 9/9/05 Office action, the examiner has shown that applicant's claim language, "base grid" reads on Latter et al.'s inner section of core catcher heat exchanger 20, and "base grid shield wall" reads on inner wall 36." Applicants are not sure what the Examiner means by the "inner section of core catcher heat exchanger 20" because the inner part of the heat exchanger is just a cavity for receiving molten material from a core melt down. Assuming that the Examiner was referring to the transverse steel sheet 24 with shock absorbing material 26 as the base grid, Applicants submit that the heat exchanger 20 and the transverse sheet 24 are positioned below the floor 22 of the containment vessel 12.

In contrast, Claim 9 of the present application recites that the base grid is disposed below the pressure vessel and spaced vertically above the floor of the containment vessel to define a sump therebetween. This structure is not taught by Latter et al. Further, Claim 9 of the present application recites that the base grid shield wall extends vertically upward from the base grid and is either spaced inwardly from said drywell sidewall to define an annular channel therebetween, or positioned adjacent the drywell sidewall. Applicants submit that because the claims of the present application recite that the drywell sidewall is located in the containment vessel, and not below the containment vessel, Latter et al. do not describe this structure.

Also, Applicants submit that the explanation of how Applicants' claim language reads on the Latter et al. core catcher, at page 6 of the 9/9/05 Office Action, is not consistent with the teachings of Latter et al. and independent Claims 9 and 17 of the present application. For

example, the Office Action asserts that "c) 'drywell' reads on the cavity below pressure vessel 14, including the cavity within isolation tube or conduit 18". Applicants submit that the cavity below pressure vessel 14 and the cavity within isolation tube 18 are two entirely separate elements that are separated by the floor 22 of the containment vessel. Further, independent Claim 9 recites that the containment vessel comprises "a suppression pool, a drywell and a floor, said drywell comprising a sidewall extending upward from said floor". Also, independent Claims 9 and 17 both recite that the drywell and the suppression pool are located inside the containment vessel. Accordingly, the assertion, at page 6 of the 9/9/05 Office Action, that "f) 'base grid shield wall' reads on inner wall 36" fails because inner wall 36 of Latter et al. is not either spaced inwardly from the drywell sidewall, or positioned adjacent the drywell sidewall. Independent Claims 9 and 17 recite that the drywell sidewall is inside the containment vessel, while, in contrast, the Latter et al. inner wall 36 of the heat exchanger 20 is not located inside containment 12. Likewise, the assertion, at page 6 of the 9/9/05 Office Action, that "b) 'suppression pool' reads on cooling tank 54" fails because cooling tank 54 is located outside the containment vessel 12 (see Figure 1). In addition, the assertion, at page 6 of the 9/9/05 Office Action, that "l) 'sump' reads on the space between the containment structure 96 and inner section of core catcher heat exchanger 20" fails because the lower end 96 of concrete structure 34 is located outside the containment vessel 12. Independent Claims 9 and 17 recite that the base grid is spaced vertically above the floor of the containment to define a sump therebetween.

Applicants respectfully submit that the Section 102 rejection of the presently pending claims is not a proper rejection. The Federal Circuit has opined that to anticipate a claim, a single source must contain all of the elements of the claim. See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 137, 1379, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986). Also, missing

elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Applicants submit that Latter et al. do not describe nor suggest all the elements recited in the pending claims of the present application.

Further, contrary to the assertion at page 3 of the current Office Action, that the device of Latter et al. "must inherently function in the same matter to produce the same results as applicant's situation", Applicants submit that the Latter et al. device and Applicants' invention do not function the same. Particularly, the Latter et al. device is positioned below the floor of the containment vessel and as such does not start to function until the molten core melt-down breaks through the floor of the containment vessel and flows into the isolation tube and then into the heat exchanger (see Col. 5, lines 1-56). The claimed apparatus of the present application starts functioning as soon as the molten core melt down breaches the reactor pressure vessel. The purpose of the current invention is to attempt to prevent the containment vessel from being breached by a core melt-down.

At least for the reasons explained above, Applicants submit that independent Claim 9 is patentable over Latter et al.

Claims 5-8 and 10-12 depend from independent Claim 9. When the recitations of dependent Claims 5-8 and 10-12 are considered in combination with the recitations of Claim 9, Applicants respectfully submit that Claims 5-8 and 10-12 likewise are patentable over Latter et al.

Latter et al. do not describe nor suggest nuclear reactor as recited in Claim 17. Particularly, and at least for the reasons explained above, Latter et al. do not describe nor suggest a base grid disposed below the pressure vessel and spaced vertically above the floor of the

containment vessel to define a sump therebetween, and an annular base grid shield wall extending vertically upward from the base grid that is either spaced inwardly from the drywell sidewall or positioned adjacent the drywell sidewall. Accordingly, Applicants submit that independent Claim 17 is patentable over Latter et al.

Claims 18-19 and 25-26 depend from independent Claim 17. When the recitations of dependent Claims 18-19 and 25-26 are considered in combination with the recitations of Claim 17, Applicants respectfully submit that Claims 18-19 and 25-26 likewise are patentable over Latter et al.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 5-12, 17-19, and 24-26 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,



Michael Tersillo
Registration No. 42,180
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070